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HOUSE OF LORDS

SESSION 1990–91

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MINUTES OF EVIDENCE
TAKEN BEFORE THE

SELECT COMMITTEE ON SCIENCE AND TECHNOLOGY

(SUB-COMMITTEE II)

Thursday 29 November 1990

ADVISORY BOARD FOR THE RESEARCH COUNCILS

Professor Sir David Phillips

MEDICAL RESEARCH COUNCIL

Dr D A Rees and Dr D Evered

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THURSDAY 29 NOVEMBER 1990

Present:

Adrian, L.	Nelson of Stafford, L.
Carver, L. (Chairman)	Nicol, B.
Dainton, L.	Porter of Luddenham, L.
Flowers, L.	Shackleton, L.
Kirkwood, L.	Sherfield, L.
Lewis of Newnham, L.	Taylor of Blackburn, L.

Examination of Witness

Professor Sir David Phillips, FRS, Chairman, Advisory Board for the Research Councils, called in and examined.

Chairman

609. Thank you very much indeed for coming and talking to us this afternoon. It is very good of you to give up your time. If you do not know, as you probably do, who we all are, you can see in any case we have our names in front of us. I am sure you know our two specialist advisers, Professor Roger Williams and Dr Mick Lomer. When we started off on this study we did so very largely because we were told that the current machinery in this country for responding to proposals for international scientific programmes was thought to be inadequate for the job, either in its coherence or in the timing of response. It was pointed out to us that the mutually beneficial response (beneficial both to us and the other participants) required both initial co-ordinated actions by non-governmental bodies, quangoes and departments and other agencies of government, and continuing involvement of them in a number of complementary ways. Would you like to say whether you think that that was a valid criticism, and if not why not, and if so what ought to be done about it?

(Professor Sir David Phillips) Thank you, my Lord Chairman. I think I would have to begin by saying that, in my opinion, it is necessary to distinguish a little more precisely what one means by international scientific programmes. If you will bear with me, I would say that there are at least five distinct categories of programmes, and the strictures that you have put forward apply to perhaps some of them, and I will come back to that. At the lowest level a great deal of international scientific activity goes on at the initiative of individual scientists who want to collaborate across international boundaries, and they are often supported by the research councils and other agencies, such as the Royal Society, but it does not involve any great bureaucratic apparatus. Broadly speaking, they simply get on with it. Secondly, there are quite large scale collaborations in international programmes, which often take place under the wing of international bodies like ICSU, which involve, say, a research council agreeing that it will carry out a programme that it is in its own interest to do, that it will itself manage, but the advantage of involving it in an international programme is that it will take place alongside complementary programmes conducted by people from other countries. Again, provided the research council knows it has the resources to engage in such a programme (such as, for example, the International Geosphere Biosphere Programme under the auspices of ICSU) it does not require a great apparatus to get such a programme going; although there will usually have been a lot of international discussions, as I said, under the auspices of ICSU or some other body. Thirdly, there are often bilateral agreements between research councils and their opposite numbers in other countries, which set up joint programmes—for example, I think I remember that the Medical Research Council had a joint programme in China on an epidemiologic aspect of one form of cancer, where the advantage was that this form of cancer was very prominent in a particular part of China. Again, if the council had the resources to do it, and made contacts with the other country, then there was no particular super-structure of bureaucracy that inhibited that. There has been a recent example: the Science and Engineering Research Council in the summer came very close to an agreement with Germany to engage in a gravitational wave experiment. That, again, is a bilateral discussion. Whether it can be done depends on the resources available to the Science and Engineering Research Council. Agreeing what should be done was not a problem. Fourthly, and now we get into a much more difficult area, there are of course multilateral enterprises, such as the European Space Agency and CERN, which do depend upon international agreements where the participating agencies in the first place do not have the resources simply to go on and make an agreement, and which in any case do depend upon a certain amount of political judgment and the allocation of resources; and here I think one does begin to get into the region of where there can be bureaucratic and political delays. Finally, there is the particular example of programmes within the European Community, which I suspect you are particularly interested in, and here I do think that there can be difficulties in negotiation—for example, on the details of the Framework Programme. One would like to see the United Kingdom playing a main part in determining the features of the programme, so that they accord with United Kingdom priorities; otherwise, any resources that we get from such a programme will in the end tend to distort United Kingdom priorities. So one does want to see a large input. I am not sure that in the past, for various reasons which you will have ideas about and

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[Chairman *Contd*]

may well want to ask me about, that scientists in the United Kingdom have played as big a part as they should in determining those programmes. I think settling the details of those programmes, which involves Ministers at a high level and complex negotiations, has often taken a long time. Also, for various reasons, at the other end of the process scientists, I think, have from time to time been inhibited about becoming involved with such programmes. I think your strictures apply to a degree to my categories 4 and 5, and perhaps you would like to explore that further.

610. What part did the old ABRC play in this? What part does the new ABRC play? Do you think it should play a larger part? Perhaps if you could expand on the relationships between ABRC, in the past and in the future, and with the Science and Technology Secretariat under the Chief Scientist in this field?

A. The old ABRC was, of course, a rather large advisory body, and it was charged with looking at the balance between national and international activities, so it did take an interest in that; but its influence over the research councils was limited to some extent by the fact that the heads of research councils did not play a full part in all the discussions at the ABRC. Under the new arrangements (which began in April of this year with new terms of reference) there is responsibility for advising on two relevant issues: on the international and national balance; and on the co-operation between research councils in all the things that they do, which is much emphasised. It is a small body. The heads of research councils play a full part in all of its affairs, and here I am treading on slightly dangerous ground, and it is in a sense quasi-executive in that the Secretary of State tends to accept its advice on the allocation of money. If the heads of research councils, after taking part in all the debate, are aware that the ABRC as a body is not in favour of some international activity then that particular research council will think very hard before taking steps in that direction. If, on the other hand, it knows that the ABRC is in favour of an international activity and is advising the Secretary of State in that sense, it will do what it can to promote such an international activity. There is also your particular point about the interaction with the Cabinet Office. The Chief Scientific Adviser in the Cabinet Office, now Professor Stewart, is an assessor on the new ABRC and plays a full part in the debate. He involves me and the heads of research councils and other members of these organisations in discussions about European and other programmes; but that is essentially in a consultative, advisory mode. I would not claim that the ABRC has any executive function there.

611. Will you get directly involved in the consideration of the European Framework programme?

A. Yes.

612. The ABRC would be directly involved?

A. The ABRC only yesterday discussed international affairs generally, and it comes back to that on a regular basis. The ABRC I do not think I can say has been asked specifically for collective advice by the Cabinet Office, but I and other members of the ABRC have often been asked for particular advice.

613. Do you think the ABRC should be asked for collective advice on the European Framework programme when it has been worked out?

A. I would be quite content for that to happen, yes.

Lord Flowers

614. Is the ABRC represented in the discussions that go on in Brussels and elsewhere in Europe about specific projects where quasi negotiations are taking place between civil servants of different countries?

A. The ABRC is not represented in the sense that it sends a nominee to take part in these discussions; but I have myself, for example, long been involved in the committee on the development of European science and technology (CODEST) and have often been involved in discussions of different aspects on that side of the programme.

Lord Shackleton

615. Are there a number of individual contacts that go on giving advice as you do on this?

A. Yes.

616. Really, quite apart from the ABRC?

A. There is another member of the present ABRC, Sir Charles Reece, who is also a member of the CODEST Committee; and a member of the old ABRC, Sir Peter Swinnerton-Dyer, is not only a member of the CODEST Committee but is Chairman of it and, as such, has very considerable diverse contacts in Brussels.

Lord Taylor of Blackburn

617. Even though you have no direct representation on the Committee you are fairly well briefed as to what is going on and what progress has been made. You are able to put your input in, off the record or by whatever means you have got of consultation?

A. Yes.

Chairman

618. Criticism has been made to us by various people, including the MRC, that particularly in respect of the European Framework programme the decisions about it seem to be made more on the basis of financial reasons than from the point of view of the scientific advantages of the particular programme. Do you think that at present the machinery, with the ABRC as it is and the Cabinet Office Secretariat as it is, is all right, or do you think

[Chairman *Contd*]

there should be different machinery to make certain that there is a better or a more, as it were, influential scientific input when the programme is being decided?

A. I think, my Lord Chairman, it sounds to me as though the MRC were questioning the prioritisation of the Framework programme; that is to say, how resources are allocated to the different parts of it. I have certainly played no part in discussions of whether the environmental science aspect should be given more or less priority than the human mobility aspect, for example. I do not know that many scientists have been involved in that discussion. That, I think, probably originated in Commission proposals which were then discussed at CREST or at the Council of Ministers into which the research councils and other bodies have only a limited input.

619. You are not dissatisfied with the existing machinery?

A. I would not want to give the impression that I was desperately dissatisfied; but I would not either like to give the impression that I was absolutely content. I do feel that formal scientific contributions to the debate about European programmes and, in particular, to priorities between programmes in Europe are not as strong as they should be.

Lord Nelson of Stafford

620. In that respect what views do you have about the Treasury practice of attribution and the way that reacts back on the programmes of the research councils?

A. The whole question of attribution and additionality is extremely complicated. I sometimes wonder whether outside the particular section of the Treasury concerned there are 100 people in the country who actually understand what happens in practice. I am not sure that I would count myself among that number! Nevertheless, there are undoubtedly beliefs about it which affect the attitude of scientists to getting involved in European programmes. There is, I know, a belief in many quarters that if you gain money from being involved in a European programme, somehow or other the research council or you will lose the money that you have gained—by it being lost from the research council budget. That I think is an exaggeration, to say the least.

621. That influences their attitude?

A. I do think, and presumably the responsibility lies with the Treasury but I am sure your Lordships could influence this, that someone should put out a popular guide as to how the system works so that we know what is going on.

Lord Flowers] They do not want you to know!

Chairman

622. Do you have anxieties that the European Framework, either because of this or generally because it is giving emphasis to comparatively short-term research, is distorting the priorities of British science? Are you in favour of it on the whole?

A. On the whole I am in favour of it. The part that I know best was the old SCIENCE programme under Framework II, and in my opinion that had a very useful effect in improving working relationships across Community boundaries. Incidentally, the UK got a quite significant return from that programme—quite largely I believe because for various reasons, including the existence of a well established exchange programme with European countries run by the Royal Society, UK scientists were rather well geared to the idea of arranging collaborations with European colleagues.

So I am in favour of the programme. I think some aspects of it have worked very well and I do not think I know of any evidence it has yet distorted UK priorities.

Lord Flowers

623. Could I ask about categories 1, 2 and 3 which Sir David mentioned—at the moment we are talking about mostly the big stuff, 4 and 5—but 1, 2 and 3 are where international organisation does not really come into it. I wondered whether you felt the research councils were sufficiently sympathetic towards the encouragement and support of international collaboration in those categories?

A. Yes, I think so.

624. Bearing in mind that your particular project, on which you want to collaborate with someone from another country, is only part of the problem, the other part someone else will pay for, so your half project is being compared with somebody else's which is wholly in this country and can be seen in total, and there is a natural barrier the research council has to face when it decides whether to fund it.

A. Nevertheless, the Science and Engineering Research Council spends approximately £9 million a year on the sort of international activity I was describing in category 1: people who want to collaborate across frontiers. The Natural Environment Research Council, through the World Ocean Circulation Experiment and the International Geosphere Biosphere Programme and so on, depends very heavily on bilateral and multilateral arrangements under ICSU and other international bodies of that general kind. When we come to larger scale collaborations, such as the putative one I mentioned, collaboration with the Germans in a gravitational wave observatory, there the ABRC does have influence of a rather direct kind. Whether councils can pursue that sort of activity depends very much, as indeed it does in category 2, on whether they have the resources to do it and whether the ABRC recommends to the Secretary of State that they should have those resources.

Chairman

625. The criticism has been made in quite a number of different circles to us that when the nucleus of an international project is being got together as a bottom-up project of that sort, which is within the financial capability of the research council itself, it tends to disappear in a sort of cloud for a long time before approval comes out, during which time those who were concerned with it and wanted to get on with it, do not know what is going on and the thing is liable to fall apart. Do you think that is a valid criticism? This is obviously the machinery within the research council itself. Do you think that is a valid criticism?

A. That happens from time to time—and indeed the gravitational wave experiment, I am afraid, will be an example of it—when research councils begin to plan such a bilateral or multilateral enterprise without having the resources assured to support it. As you will have noticed in the papers, the Science and Engineering Research Council has actually, under present circumstances, had to defer continuation of this gravitational wave experiment in collaboration with Germany, and the people involved no doubt wonder how long that deferral will last. No one at this point could tell them.

Lord Lewis of Newnham

626. How far do you believe commitment to international programmes provides problems for research councils when they are under financial difficulties particularly SERC, which seems to be in significant financial problems?

A. There can be no doubt, as I am sure we all understand, that there are several categories of inflexibility in research council programmes. The least flexible of all of these are programmes governed by international treaties, such as our involvement in CERN or the European Space Agency; and the most flexible of all are research grants granted to scientists working at the bench in institutions of higher education. In between there are various degrees of inflexibility, tending towards inflexibility the more one gets involved in international activity.

Lord Porter of Luddenham

627. The sort of problems you mention on the gravitational wave programme cannot do us any good in Europe. It must enhance our reputation of being slow to move, and rather grudgingly when we do. Do you have any idea of how this could be improved? Is some sort of co-ordinating office necessary, perhaps a small one, just perhaps one person would do in the Cabinet Office, who can look at this problem, so the British can get their act together? Also, you mentioned bringing the scientists in at an early stage and getting their act together before we make fools of ourselves in Europe.

A. The question you have asked, Lord Porter, is a peculiarly difficult and sensitive one for me to answer. The fact is the Advisory Board for the Research Councils over the last two years has not supported the Science and Engineering Research Council's bid to get involved in a gravitational wave observatory, either by itself in this country, or in collaboration with German colleagues. It has consequently not recommended the Secretary of State to allocate resources for that purpose. The Science and Engineering Research Council, nevertheless, believing this to be a very important project, sought to squeeze the necessary resources out of its current funding. Under the pressure of this year's settlement, they have found that impossible to pursue. It is worth adding to that, that it is not enough for the world to have a single gravitational wave observatory, there need to be, as I understand it, at least two. In the American budget this year, the National Science Foundation has not been awarded the funds it needed for its gravitational wave observatory. I am not sure at this stage therefore that one could say that we have acted particularly irresponsibly.

Lord Nelson of Stafford

628. Could we be clear what the role of ABRC is in initiating international projects or in monitoring international projects of the research councils which they have resourced?

A. There is one role which is perfectly clear, Lord Nelson. If the resources needed for collaboration by the research council in a large international project are outside the scope of that council's current budget, then it has to make forward plans to show the priority that it attaches to this project, the reason why additional resources would be needed to engage in it, and the Council has to persuade the ABRC that it should recommend to the Secretary of State that those additional resources should be provided. So the ABRC has a very direct role in the management of large scale projects.

629. Where additional resources are required?

A. Where additional resources are required, yes.

630. But not otherwise?

A. Otherwise in the sense that the ABRC also looks at the balance of the council's baseline activities and questions whether the council is using its money to best advantage in accordance with its own declared priorities.

Lord Lewis of Newnham

631. How much money are you actually talking about for one of these stations?

A. It is a spread of expenditure over a number of years, and I think when we were talking of one observatory in this country a figure which was much discussed was £7.5 million. That does not sound a great deal compared with the overall budget of £900 million or so. The spread of expenditure proposed for the German collaboration was rather less than that over a period of five years or so.

Lord Adrian

632. You spoke, Sir David, of formal scientific input in these matters and I take it the ABRC now, since its reorganisation, primarily gets its advice from the heads of research councils. I wonder how far it can be said to be formally scientific, if you see what I mean, when the research councils' heads are so financially interested in the consequences of any decision there may be in terms of whether to join an international programme or not, since their budget is liable to be top-sliced if they do join?

A. I am afraid that I have not quite understood that question. Perhaps I can approach the answer to whatever the question was in this way: the new ABRC seeks to adopt a rather corporate attitude to the management (if you will excuse the word) of British science. Each individual head of research council, in addition to having a role in defending and promoting his own executive responsibilities, also has a rather more general responsibility in looking at the overall balance supported by all the research councils. That is something which heads of research councils have to learn and which I would say they are learning very quickly.

Lord Adrian] That is the answer to my question.

Chairman

633. Could you say something about the Cabinet Office guidelines. Do you think they are good guidelines? Are they widely known so that people know whether things are likely to the approved? They do stress that it should be possible to make fairly early application of the results of the research. How does anybody assess that?

A. In my view, my Lord Chairman, they are rather good guidelines. They are generally available to the research council community. I know that the heads of research councils are well aware of them. I hope that the executive officers and members of the research councils are also well aware of them. I do not myself read into them any particular emphasis on the exploitation of research. I am afraid I am therefore somewhat at a loss in answering that part of your question.

Baroness Nicol

634. Could I ask whether Sir David feels that British scientists are disadvantaged either by the shortage of money, which we seem to come up against, or by the complications involved on our side in making new arrangements?

A. There can be no doubt if we make comparisons between public investment in science in this country in terms of the proportion of GDP, for example, and the investment in other European countries, we come out rather badly at the bottom of the list. Given the rising costs of almost every branch of science, that suggests that we may be at a disadvantage. I have to add to that, that the financial input to science programmes is a very important part, but it is not the only determinant of scientific quality. One also has to consider the way in which science is organised in a particular country, and the inherent quality of the scientists engaged in it. So there is between inputs and outputs something of a black box which differs from country to country, and which is not particularly well understood in any country. If you look across at the outputs from this country it is disturbing. If you use a rather crude measure like the citation index and the crude measure of the impacts of science from that index, then it looks as though our levels of basic science outputs are tending to fall both in quantity and in impact, but of course from a rather high level.

635. Over what period of time are you talking about?

A. There has been a progressive decline over the last 15 years or so, I would say, but, I repeat, from a rather high level at which we were second only to the United States both in the volume of science we produced and in the impact that it had. The other thing I would want to add to that is that my experience in Europe and elsewhere is that British science is still very highly regarded. When I go to the meetings in Brussels, for example, it is noticeable that the other countries wait eagerly, or even one might say anxiously, to hear what British scientists say in their referees' reports about the quality of scientific proposals that are being looked at in a European context. I think our standing in world science is still very high, but I fear that it is declining.

Chairman

636. When you say that applies also to what we get out of international collaboration, one can take the space field as one example But if you take others, do you think we get as much as some other countries do out of participation in international programmes?

A. In terms of basic science, and also in space related science, there are areas, X-ray astronomy for example, in which the United Kingdom scientists lead the world. If you are asking about technological advantages of being involved in the international programmes, I think it could be said historically that British Aerospace had benefitted initially a great deal from the early scientific programmes involving space, and that that had gone on to give them some sort of an advantage the later development of satellites and so on; although that, as you will know better than I, in the later stages involved a great deal of Ministry of Defence investment. In that particular area, both scientifically and technically, I would say the United Kingdom did very well.

Lord Flowers

637. There was something I did not quite follow along the lines that, the regard in which British scientists' opinions are held is perhaps going down a bit these days?

A. I said that was still very high (and I have no indication that it is actually diminishing) but that I think there is evidence of a decrease in is the volume and impact of published British science.

[Lord Flowers *Contd*]

638. You are talking about the quality of British science rather than the regard in which it is held, so to speak?

A. I am talking about statistical measures of volume and impact as compared with the regard in which individual scientific leaders in this country are held internationally.

Lord Kirkwood

639. Returning to the funding of the international scientific projects, do you think there is any virtue in proposing that that should come from the budget of some other department apart from DES, for instance the Treasury? I am thinking of projects like CERN where large changes in the rate of exchange can affect the science budget.

A. That is, with respect, a proposition that has been somewhat discussed. I myself find it very difficult to believe, since all our resources pass through the hands of the Treasury, that putting the responsibility for CERN, say, in the hands of the Foreign and Commonwealth Office would actually in the end make any real difference. The difference it would make would be that the scientific control in any sense would be lost. I know that it looks as though that is the way that very expensive high energy particle physics is funded, say, in France. What I find hard to believe is that within the French system account is not taken of expenditure through the Foreign Office as well as expenditure through other agencies in arriving at a view of the overall expenditure on basic science. I am afraid I do not see any advantage in that backdoor approach.

Lord Kirkwood] Would it not protect the Research Councils from changes in rates of exchange? That is one of the criticisms which has been levelled at the way the present funding is carried out.

Lord Flowers

640. In either case the Treasury would have to invent a formula. It is a purely technical matter they have fallen down on, or do not want to tackle.

A. To an extent that has been settled, because the Science and Engineering Research Council is allowed to buy forward on the foreign exchange market. They have perhaps, from time to time, not been as expert as they might have been in doing that. The Treasury may to some extent still be somewhat inhibiting about the freedom they have in choosing their date to do that, but there is some flexibility available. As Lord Flowers said, that I think would apply whoever was responsible for paying for this particular budget.

Chairman

641. Do you think we ought to have hosted more major international scientific projects other than JET? Would it have been a good thing?

A. I find it rather strange that in some countries, France particularly, there is seen to be an overall national benefit in hosting international projects of that kind, whereas in this country the Treasury takes the view that there is no macro-economic benefit in hosting such international ventures. There may be no contradiction between those two views; it may be that the French attach more importance to the international prestige they gain scientifically from hosting such laboratories, and it may be that the Treasury pays insufficient attention to various aspects of the economic balance. I find it surprising that one country comes out with a view that is so directly opposed to another comparable scientific country.

642. Which side are you on yourself?

A. I would have to wonder how this would impact on the science budget overall. The sort of thing I suppose that worries the Treasury and everyone else about JET is what the costs involved in decommissioning the laboratory will be. That may be a particular problem with JET which would not apply, for example, to the new European Synchrotron Radiation Facility. I am sure this is an important issue and that it presumably ought to be covered by the sort of guidelines that the Cabinet Office put out: thinking in advance of the problems which are going to arise; and ensuring that everybody plays a part in bearing the cost. Yes, I do think the United Kingdom should think more seriously about hosting international scientific projects.

643. Is it possible to express an opinion or preference about the best way of doing international collaboration between one method, something like CERN or EMBL, a totally international laboratory, and other methods such as the European Science Foundation where everybody finances their own? Or is it just dependent entirely on the particular type of collaboration you are engaged in?

A. I think the latter. I think with CERN it is hard to envisage that one could have set about continuing a European involvement in high energy particle physics by a different process from the one of drawing together in the financing of a rather large and elaborate experiment. That is not to say, I think, that this has been managed as economically as is humanly possible, but nevertheless it is a very successful laboratory. The European Molecular Biology Laboratory is really a different matter. It was hoped at the outset that the Laboratory would be much involved in the development of apparatus for the further development of molecular biology. It has not, it has to be said, been particularly successful on that front. It is successful as a general laboratory of molecular and cell biology but it does not necessarily have to be an international laboratory in order to achieve that.

644. It could have been a national one with international participation?

A. The Laboratory of Molecular Biology in Cambridge, for example, has always had a large number of foreign post-doctoral visitors passing

[Chairman *Contd*]

through it, and they have contributed a great deal to its work. It happens they have mostly been people from the United States.

Lord Porter of Luddenham

645. What about the large instruments at Daresbury and the Rutherford Laboratory? Are we getting full national advantage from sharing those internationally? ISIS and the synchrotron radiation?

A. I think I would want to distinguish between the two. I think the synchrotron radiation source at Daresbury was built at a time when Britain had a sizeable scientific community with an interest in using that; and initially the experiments, if I have the time right, at Hamburg had shown a potential usefulness for the device. It has by now built up, I think, a considerable international scientific reputation, and the Dutch and the Swedes participate in the use of it. It is a very considerable UK resource which is shared with other countries. ISIS, I think, is a somewhat different story. ISIS was embarked upon, and Lord Flowers can no doubt correct me if I have the chronology wrong, at a time when the UK was already involved in, or thinking of being involved in, the Institute Laue-Langevin at Grenoble. It provides a particular sort of neutron source, namely pulsed neutrons, which there was not at the time a large scientific community ready and waiting to use. That community is undoubtedly developing. The French and the Germans and the Japanese and others have all by now contributed to the development of ISIS. I still wonder whether, given the continuing existence of ILL, there is not an over-provision of neutron facilities; and that is something which the Science and Engineering Research Council will have to consider very hard.

646. Is the contribution you referred to a significant one?

A. The French, German, Japanese one?

647. Yes. Financially, I mean.

A. It adds up to about 25 per cent of the cost, I believe.

Lord Flowers

648. To add a word to what Sir David said, both those projects, the synchrotron radiation at Daresbury and the neutron facility at ISIS, started with a fair element of jobs for the boys.

A. Yes.

Lord Flowers] There was a high energy accelerator laboratory which had to be closed down and it was a question of what to do with it. As Sir David said, in the Daresbury case, there was a community of synchrotron radiation scientists ready to make use of something. In the case of ISIS, there was not that community. I am glad he thinks that it has now built up sufficiently to justify it; but there was a very strong element at the beginning of jobs for the boys.

Lord Lewis of Newnham

649. Is Sir David happy with the way SERC goes about supporting science?

A. I think, Lord Lewis, we are living in rapidly moving times. SERC is at the moment engaged in an agonizing review of its portfolio of activities and is earnestly considering whether there has not been recently an over-emphasis on support of big science.

Chairman

650. Sir David, you mentioned just now there were advantages in foreign scientists coming to laboratories here. Is the low level or comparatively low level of salaries in this country a serious bar to that?

A. A good many of the foreign scientists who have in the past come to work, for example at the Laboratory of Molecular Biology, have been supported in various ways by American charities. That is one of the reasons why a large number of people were actually from the United States. They, in comparison with their colleagues in Cambridge, were often rather well off.

The Royal Society would have rather more evidence than I on whether, in their existing schemes with Europe, it is increasingly difficult to attract young post-doctoral fellows from their European partners to come and work in this country. But I do not think the Royal Society has provided the ABRC with any evidence that that is the case. I think people are still prepared to come and work here on United Kingdom science.

Lord Porter of Luddenham] If I may give a quick answer, that is very true and, in fact, we are the most popular country to visit within Europe from other European countries.

Chairman] So the salary levels are not a discouragement.

Lord Dainton

651. Helped, I think, by the popularity of the language. Might I ask one question because, as this conversation has gone on, I think I understand what Sir David has said to us, which is simply this. Given the smaller envelope of expenditure for a country of our size as compared with other countries, playing our part in international projects by whatever means, apart from those small things for which the money is already available in categories 1, 2 and 3 which you mentioned, does mean that the rest of science in Britain does have, as it were, pressing on it a larger force than would be the case in other countries?

A. Yes.

652. As I understand it, the Science Vote is to get more money this year at any rate as a result of transfers from the Universities Funding Council. On paper that looks as if it will relieve some of your problems and take some of the pressure off small science but then I am told—and this is what I would like to know from you—that much of that money

[Lord Dainton *Contd*]

will, in fact, be used by universities charging greater overheads, equipment used and so on, so that really it will have no net benefit in terms of increasing the scientific activity which the research councils can afford to pay for. Is that a correct analysis?

A. Yes. In terms of research supported in the universities by the research councils this transfer will have a neutral effect. University scientists will in future expect to get back the full costs of research—except for premises expenses and university staff salaries—from the research councils, rather than expecting to get a proportion of the costs from their host institutions.

653. So this will have the effect of the universities themselves having less free money, as it were, to cultivate the seed corn amongst the younger people, who tend not to apply because they do not think they are of sufficient weight—shall we put it that way—to the research councils to be successful?

A. No. That question implies that universities have actually been misusing the money and have not been supporting the research council projects at the level they were supposed to do. Universities will continue to get an element of the support for research from the Universities Funding Council which will enable them to continue to support seed corn research before it gets to the level of needing research council support.

654. But presumably the contracts will have to be so broadly drawn that some of that money which is in the overheads can be used for cultivating seed corn, otherwise the arithmetic does not come right, does it?

A. I think so.

655. There is a rider to this, Chairman, and that is simply this. I have heard it said that, as a result of the pressures on small science and because of the Framework Programme, it is easier to get money for those very good self-generated projects in this country which go to the European Commission for collaborative work with other universities in projects which, though good, because of the exigencies of funding here would not command support from the research councils; in other words, there are some alpha quality things which can only be funded in this roundabout way. Is this correct?

A. The stringency of judgment on the Framework SCIENCE Programme projects in my opinion was at least as severe as judgments by the research councils on United Kingdom projects. I do not really think anyone would believe that it was easier to get money for scientific programmes by the European route than it is within the United Kingdom. There is a further problem, that the European money usually provides less than 100 per cent. of the costs, so that accepting a European contract imposes a burden on the host university and if they accepted too many of those they would go bankrupt.

656. And that burden will get worse the more money is transferred from the UFC to the centre?

A. No. I think, Lord Dainton, if I may say so, you are misunderstanding the purpose of this transfer. The purpose of the transfer is to make the research councils responsible for seeing that their project grants are properly funded instead of leaving it as it is now, as a shared responsibility between the research councils and the university. There is evidence that quite often the university does not provide the part that it is expected to provide.

657. But it does mean the university having less money if it takes any European collaboration?

A. But the money that it has lost should not have been used to support other European or industrial contracts. That is exactly the point.

658. Yes, I understand that. I do not think it will be perceived (to use your own term) in those ways in the universities.

A. I think it will be made perfectly clear.

Lord Dainton] Their perception may differ from your clarity!

Chairman] Sir David, we have kept you at it for practically an hour and you have made a good many things perfectly clear. Thank you very much indeed. It is very good of you.

Memorandum by the Medical Research Council

INTRODUCTION

The Medical Research Council's major policy objectives in the area of international co-operation are to participate in those activities which contribute to the development and implementation of the Council's scientific policies, and to assist in developing, for the UK academic community, scientific opportunities which cannot be provided within the UK. Towards this end MRC participates in a number of international scientific programmes (ISPs) in a variety of forms, ranging from formal financial commitments on behalf of HM Government, to participation of MRC scientists in European Community (EC) and European Scientific Foundation (ESF) networking activities and programmes.

MRC's formal commitments on behalf of HM Government include payment of the UK subscriptions to the European Molecular Biology Conference (EMBC), European Molecular Biology Laboratory (EMBL) and International Agency for Research on Cancer (IARC). In addition, MRC provides the UK delegation to governing councils and management committees for various ISPs including EMBC, EMBL, IARC, the Medical and Health Research (MHR) programme (with DH) and Human Genome Analysis programme of the EC Framework Programme, and the European Medical Research Councils (EMRC) standing committee of the ESF. A brief description of the ISPs with which MRC has formal links on behalf of the Government is given at Annex 1.

These ISPs undertake work in a variety of different ways; in the case of EMBL research projects are funded and conducted in-house, whereas the EC MHR programme (at least at present) and the ESF function to co-ordinate research activities which are funded nationally. In addition both the EC and ESF support training programmes.

Scientific research is inherently international; it is therefore fundamental that when an ISP is established the mode of operation and programme of work should aim to build on existing links in order to avoid duplication of, or competition with, national priorities.

MRC's perception of the advantages and disadvantages of participation in ISPs varies according to the basis on which each programme was initiated and has subsequently operated. The replies to questions below will therefore make distinctions between different types of ISP where appropriate.

(i) The advantages and disadvantages in joining ISPs, to the UK, to the funding department, and to the participating institutes.

The main advantages of involvement in ISPs for the MRC are related to MRC's role as a funding agency, and are as follows:

(a) The promotion and enhancement of international networks of scientists. Such networks can operate to maximise the use of national resources and research effort, ideally generating added value, that is, making progresss which could not be achieved by any single nation.

(b) The ability to undertake research of a scale and complexity which the UK alone could not support. This may be for reasons of scale and commitment (e.g., some multi-centre clinical trials) or for reasons of complexity and/or cost (e.g., the human genome programme).

(c) The procurement of financial support from overseas grant giving bodies, such that it is possible to increase the scale of UK medical research.

(d) Access to manpower with expertise which is unavailable or scarce in the UK.

The principal disadvantages are:

(a) A mismatch with national priorities can occur where the interests of other member organisations prevail over those of the UK; this can result in ISPs undertaking work which duplicates or runs counter to UK national priorities.

(b) A similar lack of co-ordination with national priorities can arise as a result of the inadequacy of existing mechanisms for establishing an overall UK strategy towards priorities in international collaboration.

(c) In some cases management arrangements for implementation and evaluation of the programme are inadequate (for example some elements of the EC Framework Programme). These arrangements shyould include direct involvement in the management processes, application of rigorous standards for international science through peer review, and evaluation procedures that allow the termination as well as the starting of projects.

(d) Participation in ISPs may lead to constriction of the domestic budget, e.g., the EC Framework Programme, where as a consequence of the Treasury rules of attribution Departmental budgets are required to meet the full costs of the Programme.

(ii) The advantages and disadvantages of hosting large facilities, to the UK, to the funding department and to the participating institute.

The MRC does not at present host any large facilities in the sense of major plant, etc., and is therefore not well placed to comment on this aspect. However, there are increasing opportunities for UK European institutions to act as European "resource centres" in particular areas under the Framework Programme (e.g., Human Genome Analysis Programme) and the MRC would react positively to such openings provided they were economically viable and not at the expense of access by UK scientists to the facility in question.

(iii) The machinery whereby international programmes are set up and its adequacy in the UK with specific examples where appropriate.

The machinery employed to set up ISPs varies according to the origin and objectives of the initiative.

For politically driven "top-down" initiatives negotiation with participating countries is often conducted by the Cabinet Office, with advice from the relevant Departments. The MRC may be invited to provide input via the DES and possibly DH. This flow of information may satisfy the political objectives of the exercise. However, it can also serve to inhibit the extraction of maximum scientific benefit from the collaboration. This is because the input from the scientific community is too remote from the ultimate decision-making point in the process of planning and implementaiton of new ventures. In the interests of greater cohesion of national scientific priorities the MRC would like to see stronger strategic scientific input to the establishment and running of ISPs, perhaps through the mechanisms of an interagency committee, to ensure that the UK approach to such ventures is set within a true framework of national scientific priorities. A good example of where such a development might work to the advantage of the UK would be in negotiations over the EC Framework Programme where, despite a developing consultation network, there still remains a fundamental lack of strategic scientific direction.

Alternatively, science-led "bottom-up" initiatives for international collaboration may arise with minimal input from Government. This category of initiatives includes the activities of self-appointed groups of scientists, such as EMBO and HUGO (Human Genome Organisation), which do not involve direct funding, and also networking activities undertaken under the auspices of the ESF. ESF activities are particularly attractive to the MRC because the management structure incorporates representation of national funding agencies, and therefore allows for co-ordination with national priorities. ESF also operates an "*a la carte*" approach whereby member organisations can choose whether or not to participate in specific programmes against a background of peer review and domestic priorities.

In general, the MRC'S experience is that the decision-making machinery currently employed is appropriate to the main objectives of each ISP, i.e., Cabinet Office for fundamentally politically driven programmes, such as the EC Framework Programme, and Research Councils for scientifically driven programmes, such as those within the ESF. However, for both types of initiative there is a need too for an effective mechanism for co-ordination with national scientific priorities and for transparency of management in order to achieve maximum scientific benefit.

(iv) The technical and financial criteria under which proposals for ISPs are presented and considered.

As for (iii) above, the selection of an ISP is to some extent influenced by the political versus scientific objectives of the programme. But there are elements which the MRC sees as essential to any ISP regardless of its origin:

(a) The programme must fulfil the principle of "subsidiarity" or "added value", that is, it must provide opportunities for research or research training which cannot be provided equally well or better in the UK. Thus, for example, the MRC has identified the following areas as appropriate for support under the Biomedical and Health Programme of the EC Third Framework Programme:

- Training.
- Epidemiology.
- Health services research.
- Multicentre trials.
- Multi-disciplinary teams in areas where local skills are in short supply.
- Targeted areas with special needs such as AIDS and human genome analysis.
- Adverse drug reaction and surveillance and monitoring.

(b) Where the UK subscribes to a common pool, the management processes of the programme must allow a degree of control over the allocation of funds to satisfy the principle of accountability.

(c) Scientific quality should remain the principal criterion for determining the allocations of funds and ISP management mechanisms should include independent peer review and evaluation to assess both scientific quality and cost-effectiveness.

(v) The forums in which the decision to participate in ISPs is normally reached.

See (iii) above.

(vi) Government practice and guidelines of ISPs—how they apply and how widely they are known and accepted.

The MRC is aware of and accepts Cabinet Office guidelines for international collaboration issued in 1989.

(vii) Treasury rules of additionality and attribution—how they apply in respect of ISPs and the Science Budget and how they treat the inflow of foreign money.

The MRC would like to see greater flexibility in the attribution system for the EC Framework Programme in order to minimise the potential impact of EUROPES arrangements on UK funding priorities. This should take into account both the Research Councils' limited influence over the size of the programme and its political function.

The costs of the subscriptions to the EMBC, EMBL and IARC are included in MRC baseline funding and are not therefore subject to Treasury rules on additionality and attribution.

(viii) Impediments within the UK to engaging in ISPs, e.g., Treasury rules, relative to UK salary scales, housing, travel and family charges, exposure to currency fluctuations, commercial secrecy and intellectual property rights, COCOM restrictions.

The MRC would identify the cost of participating in ISPs and the impact on funds available for research in the UK as the main impediments to engaging in ISPs. Unlike other European countries, UK involvement in European ventures is generally at the expense of national programmes, an inhibiting factor at all stages of negotiation and prosecution of programmes. A second area of concern in the problem of currency fluctuations in the payment of UK subscriptions.

(ix) Impediment in other countries to their engaging in ISPs (EEC; Commonwealth, USA, Eastern bloc), e.g., concern with national benefit and protectionism, problems posed by national budgeting procedures.

The MRC has no direct experience or knowledge in this area and is not therefore in a position to comment.

MRC PARTICIPATION IN INTERNATIONAL SCIENTIFIC PROGRAMMES

1. *European Community Framework Programme*

Established : First Framework Programme 1984-87; legal basis in 1987 revision of EC Treaty by Single European Act. Articles 130f-130g are the foundation of the research and technological development policy.
Cost to MRC : Indirect, through attribution to DES.
Activities : Shared cost, concerted action and training programmes in all areas of scientific and technological research. MRC provides UK representation on management committees of the Medical and Health Research Programme (with DH) and Human Genome Analysis Programme.

2. *European Molecular Biology Conference*

Established : 1970, by intergovernmental agreement.
Cost to MRC : MRC pays the UK subscription to EMBC (£568k in 1990).
Activities : Courses, workshops, fellowships, travel grants.

3. *European Molecular Biology Laboratory*

Established : 1974, by intergovernmental agreement.
Cost to MRC : MRC pays the UK subscription to EMBL (£2.6m in 1990).
Activities : Basic research in molecular, cell and development biology.

4. *European Science Foundation (including European Medical Research Councils)*

Established : 1974, nongovernmental.
Cost to MRC : Approximately £167k in 1990.
Activities : Promotion of international collaboration through workshops, networks, programmes.

5. *International Agency for Research on Cancer*

Established	:	1965 by WHO statute.
Cost to MRC	:	MRC pays UK subscription (£520k in 1990).
Activities	:	Multidisciplinary programme of studies in environmental carcinogenesis; research training fellowship programme.

6. *Commonwealth Caribbean: Medical Research Council*

Established	:	1973.
Cost to MRC	:	None. MRC administers the UK contribution on behalf of ODA (£19,000 in 1990).
Activities	:	Advises on medical research in the region, and administers research grants.

Examination of Witnesses

Dr D A Rees, FRS, Secretary, and Dr D Evered, Second Secretary, Medical Research Council, called in and examined.

Chairman

659. Dr Rees, I thank you and your colleague very much for coming here this afternoon to give evidence to us and thank you also very much for your very clear written evidence which you submitted to us. You can see who we all are but you may not know our specialist advisers, Dr Mick Lomer and Professor Roger Williams. If you would like to introduce yourselves and make any introductory statement in amplification of your paper we would be delighted to hear it?

(Dr Rees) Thank you very much. I am the First Secretary of the Medical Research Council and my colleague Dr Evered is the Second Secretary, and our personal involvement in European structures, which is part of the issue that I understand you want to address today, is rather different. I am involved directly in European Science Foundation matters and Dr Evered is involved in the Community science programmes, so that I think we will share the answering process between us depending on the nature of the question. I think it is useful in talking generally about international scientific programmes to distinguish between two extreme types: those that are scientifically driven, that is, they are set up in order to achieve some scientific purpose, and those —and I use the word in a neutral sense and not perjoratively—which are politically driven. An example of the first would be our Anglo-French collaborative projects on AIDS, where, in order to carry out a drug trial, to get enough patients to make a statistically meaningful trial we have to pool the patient resources of the two countries and we do the job better together than we could do separately. Or another example might be sequencing the genome of the nematode, which is an Anglo-United States project, which again is a task of such scale and involving such complementary expertises that we can do it better together than we could separately to establish an important model study for the human genome. So in the scientifically driven projects we each go into the exercise because we know what we want out of it and the rules of the game and the success or failure are very similar, (except for questions of scale) to those which determine the success or failure of any collaboration within a single country. Admittedly, later on when the interests of the partners begin to diverge, as often they do and especially if you have made a heavy investment in plant and hardware, then it gets more complicated but I will not go into that—there are other research councils who have more experience of that than we do. Moving on to the second type of international scientific project, those that are politically driven (which is where we as a Council have more problems to sort out), the best example and also the example which causes most concern is that of the European Economic Community. Here science is being used —and I am not saying this is a bad thing—as a glue in order to help to cement the bits of Europe together, to improve communications and so on, to accelerate to some end state where science hopefully works better. But the projects are not in the first instance set up solely to achieve an important research goal. I think these raise a number of practical and managerial problems which we in this country have not yet learnt to cope with very well. The problems are in two areas. One is that the translation of the political will to achieve a higher degree of collaboration in Europe in scientific issues originates in Brussels by processes that are not entirely transparent to us, processes which we think we should have more input into, which we should influence more and which it would be in our interests to influence more. Secondly, those proposals, having emerged from the Commission, are dealt with, coped with, responded to, within the United Kingdom by processes which involve a lot of interests, different research councils, different government departments and involve national policy in the Foreign Office and the Cabinet Office and so on. So to respond effectively we need to get our act together and that is another area in which there is room for improvement. Finally, I would say that, of course, European programmes do not come for free; the United Kingdom contributes to them. The present policy is that the costs of these programmes are attributed to departmental budgets, including now the Department of Education and Science, which effectively means that money comes out of research council budgets in order to fund these European exercises. That makes it all the more important that we get these European programmes to work well because otherwise we are substituting poorly organised research programmes for activities which we run perfectly well ourselves at the present time, so that the value for money could, in fact, go down.

[Chairman *Contd*]

660. Can you give an example in your own field of where your budget has been seriously affected by having a European Framework Programme in your field attributed to you which you would not have put money in or would not have wanted to put so much money in?

(Dr Rees) There are certain programmes which are attributed to the Department of Education and Science. They are those programmes for which the DES has the lead responsibility and then it is for the DES to decide how to pass on the costs to the research council system.

661. So you reckon your Medical Research Council allocation has been less than it would otherwise have been because the DES are having to pay for European programmes?

(Dr Rees) Yes.

662. Is it because they are supporting something in your own field in the European programmes or in another field?

(Dr Rees) In our own field, recognised to be in the area of interest of the research council system, and that is why it is done. I do not think there is any possibility, is there, of arresting this process in Brussels? There might be a question as to whether this process of attribution should occur, that is, whether the programmes should be instead of national programmes rather than as well as.

Lord Flowers

663. Could I ask Dr Rees to be a little bit more specific. Are you really saying there have been serious cases, not trivial ones, where effectively your money was spent on things which you would rather it had not been spent on?

(Dr Rees) No, not yet, but this year is the first year. Up till now most of the European programmes have been of a rather applied nature, so that, for example, biotechnology has been attributed to the Department of Trade and Industry until its recent partial transfer to Education and Science. European programmes are now moving more in the direction of basic science, which is the proper province of the research council system, so that for the first time this year a top slice has been taken from the research council budget. It is only of the order of several million pounds but as the programmes increase this amount is bound to increase and it is a cause for concern, something that we have to watch.

664. Have you any reason to suppose that money will not be spent as carefully as you would have spent it, or is it just about distrust of foreigners?

(Dr Rees) No. The point I am making is a different one, Lord Flowers, that if this process is going to occur then we should equip ourselves better to make sure that the direction and management of those European programmes reflect our interests and our priorities, and at the present time we do not do that very well.

Chairman

665. When you say "we" do you mean the Medical Research Council or do you mean the Government or the research council organisation as a whole? Do you not yourselves have an input into Brussels?

(Dr Rees) I would say that the Medical Research Council is in a slightly different position, and my colleague will speak about this in a moment, because there are two European programmes in which we are involved. One is the Medical and Health Programme and that is smaller and more tightly organised and on the whole more satisfactory.

666. That is an ESF programme?

(Dr Rees) No, the Medical and Health Programme.

667. A Community programme?

(Dr Rees) That is right, and then there is the Framework Programme as a whole and that is the area about which I am more concerned. I am saying that the research councils do not have as much influence on it as we should in our own interests and in the national interests, but I am not necessarily saying that it is our own fault. It is because the mechanisms we have in place within this country do not allow us to make the quality of input that I think would be helpful and because within Brussels, where the programmes are originating, we do not succeed. Perhaps it is the old story of Britain just not trying hard enough, but we do not have as much influence at the beginning.

Lord Dainton

668. Am I right in understanding, since you did refer earlier to what I imagine was part of your Framework Programme, namely, social cohesiveness, that that is something which in a sense you feel you would have liked to have a good deal of opportunity to discuss before it was determined?

(Dr Rees) Yes, line 6, the human capital and mobility programme.

669. On the other hand, I suppose it would be very difficult to take any moneys which are being used for that purpose and attribute them to any particular department in this country, would it not, so that you might be unaffected financially by attribution?

(Dr Rees) No, it has to be attributed somewhere.

670. Yes, but where?

(Dr Rees) If it is in basic sciences it is likely to be attributed to the research council system and then it is likely to be divided up *pro rata* proportionate to the scale of the budgets between the various research councils.

[Lord Dainton *Contd*]

671. So it is the detailed nature of the work which is done, not the general heading, which determines the attribution?

(Dr Rees) That is right. So that if we are going to have to spend a certain amount of money on human mobility there are certain ways in which it is better to do it than other ways and we would have to do this.

Chairman

672. You suggested it is the machinery which is at fault, and in your own paper you suggested the establishment of what you call an inter-agency committee. What do you see this as being, and what do you see as its relationship to the ABRC and to the Cabinet Office Secretariat?

(Dr Rees) It would involve the ABRC. We say in our paper, I think, that the actual machinery is not important, but what is important is to achieve the end of having a focus for UK influence on European programmes, and many people have argued for example that we should have a Minister for Science rather than having the scientific responsibility divided up between the various government departments. Others would say with the shift (and I have a great deal of sympathy with this) of emphasis of European programmes towards the basic sciences, we should look to a DES minister rather than a DTI minister taking the lead role. Alternatively, if you keep the structures the same at that higher level, I think there has to be a mechanism which operates at chief scientist level at least to get the points of view together and produce a single point of view which then equips whoever it is who goes to Brussels to represent a single national position this would be an interagency committee based on the ARBC.

673. You do not think the science and technology secretariat in the Cabinet Office under the chief scientist is doing that, or is not doing that properly?

(Dr Rees) I do not want to be the new chief scientist's adviser, and I would not wish to criticise him in any way, nor the old one.

674. That is the office which is supposed to be doing just that, is it not?

(Dr Rees) Yes.

675. You say it is not doing it properly?

(Dr Rees) I do not think the end product is being delivered.

Lord Adrian

676. Could I change the direction of sight slightly and refer to the HFSP, which is a small programme but one which was set up some time back from the top-down. I have to come clean on this and say I am a member of the scientific committee, and I think I was first approached (although it has to be said it was somewhat vague as to who actually made the approach) by the Royal Society to ask me whether I would be on that committee and then I was approached by the DES. In view of what you say, I am a little surprised because there is a mechanism in this case. There are two scientists, Sir Walter Bodmer and myself, on the scientific committee and I have not been approached by the MRC. If the MRC were anxious to have a scientific input, one is there, but maybe one is not at the right level to be spoken to, as it were?

(Dr Rees) Certainly, but I think the HFSP is totally different from the Community programme.

677. I entirely agree, it is different.

(Dr Rees) There are two trustees in addition to yourself and Sir Walter Bodmer, who represent the DES and the research council system, and we make our input through them rather than directly to the independent trustees, yourselves. I am totally content with those arrangements as they exist. There is a world of difference between the HFSP, which started off as a sort of quasi-philanthropic exercise to make more money available (it may not be that now and many people suspect it to be a Trojan horse for something else but nevertheless the theory was it was a quasi-philanthropic exercise which would make more money available to science) and who could be against that? Whereas the EEC process is politically-driven, it is about orchestrating us to work more together and using some of our own money in the process.

678. I entirely take the point, my Lord Chairman, that the enterprise is small, but the point I was making was that I was in a sense slightly concerned that although the MRC was saying they wished more scientific input, it was not something, from my personal experience, they had exercised, though I entirely take the point there are other trustees with whom the MRC have contact.

(Dr Rees) We were in fact directly instrumental in agreeing the areas in which HFSP would operate.

Lord Adrian] I appreciate that.

Chairman

679. Would it not be true to say, on the whole, that you do not like the European Framework programme at all and you could very well do without it in your field?

(Dr Rees) I am a practical research administrator. I think the Framework programme exists, we have to be part of it, and we have to make it work properly. We are not doing that now, that is my point.

680. You talk about the fundamental lack of strategic scientific direction in it. Is that bound up with what you said before, that we do not get an input into the stages at which the Community makes proposals?

[Chairman *Contd*]

(Dr Rees) The fact is that projects do originate within the Commission by a mysterious process of consultation and somebody somewhere having an idea; this is not an open process. When we in the Medical Research Council or the Advisory Board for Research Councils think about increasing support for an area, we think about what other areas we could support, we argue openly about which is most important, where the priorities lie. We do not see that happening in Brussels. Maybe it does, but rabbits come out of a hat.

681. This is what you mean by "transparency of management"?
(Dr Rees) Yes.

682. Do you not have spies in Brussels to tell you what is coming out of the hat?
(Dr Rees) We try to have, but this is a question which I do not think the MRC can tackle by itself, or SERC by itself, or the DTI by itself. It is something we need to organise, hence we want a single voice.

683. Your answer is a Minister of Science?
(Dr Rees) Or a DES Minister, or an organisation at the chief scientist level.

Lord Flowers

684. Could I ask whether Dr Rees finds the European Science Foundation mechanism a useful one, not as a substitute but a useful mechanism? Dr Rees knows very well I once had a connection with it.
(Dr Rees) We place a high value on the European Science Foundation type of project and I am very active in that myself as chairman of one of the standing committees for medical research. I think the great strength of the European Science Foundation is that it operates by seeking to build on the activities of the member organisations, so we start from where we are, what we are trying to do and then, in a scientifically-driven kind of way, try and get our acts together. Its great weakness is that it does not have much of a budget.

685. Is it not possible to define a programme through the ESF machinery and then get it funded through the Brussels machinery?
(Dr Rees) A brilliant idea! I wish that could happen and there are people who, as you no doubt well know, are trying to do that now, to use a proportion of line six, human mobility activities and conference activities, to pass some of the management of those into the ESF. I understand they may have a certain limited success, and I hope they have. Another thing I wish would happen is that Brussels would use the effective European mechanism already in place, of the European Molecular Biology organisation which thinks it is under funded, and keeps asking us for more money which we cannot afford. In Brussels they are sitting on piles of money wondering what to do with it. Why do they not take that effective mechanism and achieve their purposes through that? Those are the issues, if we can get into the discussions, which I think should be pressed.

Chairman

686. We had an impassioned plea from the EMBL that was the way to organise international programmes. Would you agree with that?
(Dr Rees) I think that the EMBL has a great deal to offer. I do not think that anywhere in Europe, including the EMBL, do they operate choices of scientific priorities as stringently as we do. We have become used, if we ever want to start something new, to having to stop something that is already on-going. That is an entirely novel thought for EMBL, so that if they want to start something new they ask the member organisations, including ourselves, to pay more, which means stopping something over here, and we find that very difficult indeed. So I think with that qualification there is some excellent science going on and it could do a lot more for Europe but it would be very helpful if the extra resource could come from the central European fund.

Lord Flowers] Dr Rees prehaps remembers that the electron synchrotron radiation facility was designed through the ESF mechanism and the money had to come from other sources, but the whole project went ahead because of that mechanism and it ought to be used more often, it seems to me.

Lord Porter of Luddenham

687. Could I clarify something I think I misunderstood when you said so strongly about European science being used as a glue to cement the European Community together. Are you saying that the quality of the science is less than it is in a national programme and the applications are, therefore, rather easier to come by than in a national programme, because you were here, I think, when Sir David appeared to state the opposite?
(Dr Rees) I happened to overhear Sir David. I think Sir David is actually personally involved in some of the projects and some of the processes as a member of CODEST, so that he will have a more first-hand impression than I. As an example from the Medical and Health Programme of unfortunate priorities, there were discussions within that Community programme about the areas and projects which should be started. There are perfectly good European collaborative arrangements for research in cancer at the present time but for political reasons the French thought it would look good to have a Community programme on cancer, so they have a programme on cancer, but in our view it would have been better to have had a programme on something which was in greater need of co-ordination and collaboration.

Lord Nelson of Stafford

688. Could I raise the question of the attribution system, which none of the research councils likes, as I understand it, but you ask in your paper for greater flexibility in this system. What extra flexibility have you in mind, Dr Rees?

(Dr Rees) I think it is operated rather rigidly. There is no discussion with us about what attribution we should take, what level of interest we really have in the activity, what it is appropriate to charge us for.

Chairman

689. In the evidence which was given to us by the Treasury they made the point that it was up to departments anyway, if not research councils, to argue, as it were, about the attribution made to them, to make representations, and we were given the impression that this was just like the annual bargaining process that goes on between every government department and the Treasury all the time. Does that not happen?

(Dr Rees) It does.

690. But you do not have any part in it?

(Dr Rees) No, the DES goes through that process on our behalf.

691. Do they not consult you?

(Dr Rees) Are you taking evidence from the DES?

692. They do not consult you?

(Dr Rees) Well ....

Lord Sherfield

693. You say in your paper that the consequence of the Treasury rules of attribution is that departmental budgets are required to meet the full cost of the programme. Is that so?

(Dr Rees) Yes.

694. The Treasury have told us at various times that of such money as comes from Europe only about two-thirds has to be met through the process of attribution and the result is that a third is, so to speak, an additional amount.

(Dr Rees) As I have said, one of my problems is that I am remote from the process. My understanding was and is that the full cost is recovered but it may be that that is incorrect or it may be that there are certain special circumstances which involve departments other than the DES where concessions are made.

Chairman

695. The Treasury claim that 35 per cent. of the actual Community cost of the project is not then attributed to the departments and 65 per cent. is. I think that is right.

(Dr Rees) It would be extremely helpful if the details of those calculations could be laid out and if we could have a chance to comment on them and discuss them.

Chairman] We have actually tried to but have not been able to get at how they work that out, but there is a piece of paper which we have.

Lord Sherfield] Yes, there is quite a lot. I asked that question because I wanted to be sure what, as far as the Medical Research Council was concerned, was the result.

Lord Nelson of Stafford

696. By "more flexibility" what you are really saying is that there should be more money forthcoming when the case is adequate?

(Dr Rees) Yes. If, indeed, that 65 per cent. does exist, there could be some flexibility about whether it should be greater.

Chairman

697. But when you say "flexibility" presumably you accept that money which has gone into research in the European Framework Programme must somehow be considered *in toto* against the sum of money which the Government is prepared to spend on research and development?

(Dr Rees) Not entirely. I think if part of the exercise is to achieve a political end, a very good political end, and the various governments in Europe are prepared to sub-optimise on the quality of the science, then there should be an extra contribution for the loss of productivity of the scientific system which is borne in order to meet that political end.

698. I think you would find it very difficult to get anybody to accept, what with the fact that all the projects are subject to peer review and so on, that there is an element which is purely political. It reminds me of the arguments I was very familiar with when I was Chief of the Defence Staff from the Navy which suggested that a deterrent force should be charged to the Foreign Office.

(Dr Evered) If I might respond to that, it is not the case that all applications are subject to peer review; that only applies to certain Community programmes.

699. Only to the Framework Programme?

(Dr Evered) No, it only applies to some programmes within the Framework.

700. There is one other point. I think you were here when I asked Sir David Phillips a question about whether salary scales in this country were a deterrent to foreign scientists and researchers coming over, and the answer we seemed to get was no, they were not. Is that your opinion, too?

(Dr Rees) It depends on the level. I think that at the higher levels it is a serious problem.

[Chairman *Contd*]

At the post-doctoral level, I think it may sound old fashioned but the sort of person we want to come over here is the highly gifted and scientifically ambitious young scientist who wants to go to the best institutions in Europe, and we still fortunately have some of the best in medical research, and he will live as the natives live, if that is what is on offer. As Sir David said, actually a number of them come on international fellowship schemes, charitable schemes, where the rates are set in their local countries or as EMBO fellowships across Europe, and they suffer no penalty. At the higher level, our senior scientists take senior posts in the Pasteur Institute and in Denmark and elsewhere and naturally we look for exchanges in *quid pro quo*. I can say that we have recently attempted to offer posts on one hand to a German and on the other to a Swiss—very distinguished—at our premier institution in Cambridge and the material rewards emerged as a real problem—pension rights and salaries. They have to be prepared to take a drop. By the time you get to that stage, where there is a family and children, as well as all the upheaval and language problems, a drop in the standard of living for your family is often the final straw which turns the possibility off.

701. Thank you very much. Dr Evered has not had much of a say, is there anything you would particularly like to say?

(Dr Evered) Perhaps just one point, going back to the European Community programme. I think it is important to emphasise there is some distinction between the medical programme and the many other components under Framework. I think there are two distinct differences. The first is that health was not a component of the Treaty of Rome. The result of that means the health related issues are dealt with by no less than eight directorates-general and that, as you will rightly appreciate, causes a number of problems. Secondly, we do have a direct input to the management committees in Brussels because we provide the DES input. We are more advantageously placed than the other research councils. This does of course give us some unique insights into the mechanism by which the Commission operates but nevertheless there are problems, a number of which we have touched upon. I think the counterpart of this rather long, attenuated process by which the scientific input from the UK gets diluted through the UK channels, is a similar process which occurs in Brussels as proposals go through the Commission, members of the European Parliament, CREST, the Committee of Permanent Representatives and the Council of Ministers, and that goes through two cycles, one for Framework and one for the individual programmes within Framework. That again gives a great deal of dilution and often leads to a distortion of the programme, which provides a challenge for those on the management committee to try and re-shape it when it is handed down in the form of a final Council decision. We have become very much more pro-active within the Council of Europe, and have provided a great deal of what has gone into the technical annex of the two programmes where we have a seat on the management committees—the human genome and the bio-medical programme. A great deal of the content of those programmes was provided by the Medical Research Council. We still of course need to ensure the objectives which we have defined are achieved and again there are a number of problems which we have touched on, which I will not elaborate on—evaluation, project management and assessment and monitoring—but there are problems there which we are trying to involve ourselves in more actively. Our influence is limited for the reasons I have outlined.

702. In all this field how are the views of the medical research charities taken into account?

(Dr Evered) The answer to that is relatively little. We have of course relatively good informal relationships with the charities, both as a body and particularly individually, thinking of the larger medical research charities. So in that sense we are aware of many of their major activities.

There is, however, no mechanism for a direct input with respect to sharing the scientific strategy of Europe, non-charity.

703. Ought there not to be?

(Dr Evered) I think that question perhaps ought to remain open on the grounds that the attribution is back to the DES and the Science Vote, whether it is 100 per cent. or two-thirds.

(Dr Rees) I think it is an excellent idea if they chip in and then they can have a say.

704. It is very different in other fields of research, is it not, particularly in the cancer field, for instance, where an enormous amount of research is carried on outside the United Kingdom research councils?

(Dr Evered) Indeed, and, of course, we do have a major co-ordinating committee of which we and the two big cancer charities are the major sponsors.

705. So it would be in that committee that the question of participation in an international programme in that field would be considered?

(Dr Evered) It is not quite that specific. There is a general exchange of information about activities within Europe but we see it as our primary responsibility to try and ensure the development of programmes which are complementary to and contributory to national programmes, so that there is genuinely national and Community added value.

(Dr Rees) I think it is fair to ask whether there should be representation without taxation. We are taxed, they are not, so it is perfectly correct that they should be involved informally but as sensibly as possible.

706. Yes. I am thinking that if you are considering an international programme in a

[Chairman *Contd*]

particular field you want to take account of the people who are doing research in that field before you set up something else?

(Dr Rees) Absolutely.

Lord Nelson of Stafford

707. I was rather interested when Dr Evered said that the Medical Research Council has direct access to Brussels. Does that mean that you can move more quickly than the other research councils because of that direct contact?

(Dr Evered) We may be able to move more quickly, Lord Nelson, but it does not necessarily follow that the Commission moves more quickly, unfortunately.

708. I was rather thinking of the decision-making in this country. Others have complained how slow the decision-making process is in this country but they have not got your problems.

(Dr Evered) We can make a direct input and we do at various stages in the process, both in terms of shaping the strategy and in determining the management mechanisms.

709. Would you say that was an advantage?

(Dr Evered) I believe that to be an advantage.

(Dr Rees) Would you say also, David, it is an advantage having just one research council and one government department with an interest?

(Dr Evered) Yes. That is, of course, not quite the case because there is a Department of Health interest, although they are the minor partners.

(Dr Rees) I am sorry, I meant one other department than the DES.

(Dr Evered) Yes, I agree with that.

(Dr Rees) So it is really a microcosm. It is much easier to work on a smaller scale.

Lord Nelson of Stafford] Yes, it is not just the one.

Chairman] Dr Rees and Dr Evered, thank you very much indeed for your very helpful evidence to us.

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